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(54) STRAW

(57) The present invention relates to an improved structure of a straw, which includes: a straw body (10) which is hollow cylinder made of plastic, a plurality of fork portions at one end of the straw body (10) to define a plurality of gaps there between. Each fork portion includes a body portion (111) and a top portion (112). The body portion has one end connected to the straw body (10), and another end connected to the top portion (112). The body portion (111) is uniform width, and the top portion (112) has an arc-shaped external end. The above structure solves the problem of the conventional straw that the conventional straw is likely to be blocked by solid in the beverage, and is unable to pick up the fruit pieces in the beverage.

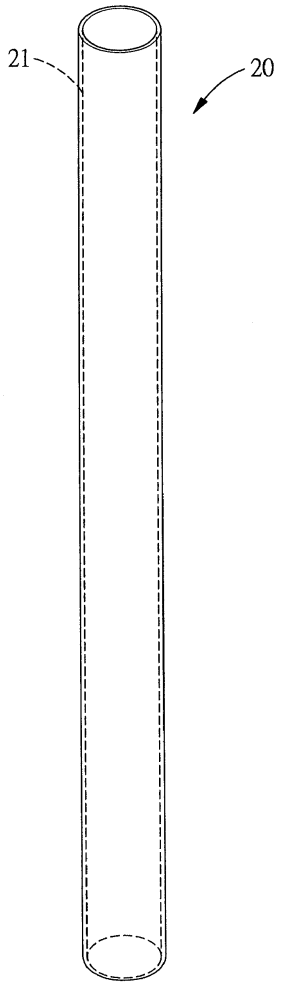


FIG. 1

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to straws and, more particularly, to a straw effective in transferring solids in a beverage from its container to a user's mouth and preventing the solids in the beverage from clogging the straw.

2. Description of the Prior Art

[0002] FIG. 1 shows a conventional straw. The conventional straw is a plastic tube 20 provided centrally with a channel 21. The conventional straw is for transferring a beverage from its container to a user's mouth and taking in bone marrow of cooked long bones of animals. In general, the conventional straw has a diameter of 0.5cm approximately, but has a larger diameter, i.e., 1.5cm, for use in taking in yogurt, bubble tea, etc.

[0003] The straw is capable of transferring a beverage and food from its container to a user's mouth by the principle that "the gas pressure inside the straw is lower than the atmospheric pressure outside the straw". The user sucking the straw removes some air therefrom and thus reduces the pressure inside the straw; hence, the atmospheric pressure outside the straw is higher than the gas pressure inside the straw. The pressure difference causes the liquid inside the straw to rise. Gaseous communication between the inside of the straw and the outside occurs as soon as the user's mouth separates from the straw, and in consequence the gas pressure inside the straw equals the atmospheric pressure; hence, the pressure difference is reduced to zero, thereby causing the liquid inside the straw to descend. Likewise, a crack in the wall of the straw will enable gaseous communication between the inside of the straw and the outside, even if the user sucks the straw with the other end thereof placed in a beverage, and in consequence the gas pressure inside the straw equals the atmospheric pressure; hence, the straw with the crack is not capable of transferring the beverage from its container to the user's mouth.

[0004] In the 19th century, Americans were fascinated by icy, mildly-flavored alcohol, and they prevented heat in their mouths from lessening the iciness of the alcohol with a hollow-cored wheat straw inserted into the alcohol in a container rather than drinking the alcohol directly from the container. However, wheat straws not only break easily, but their flavor also permeates the alcohol. Dissatisfied with wheat straws and inspired by paper cigarette holders, Marvin Chester Stone, an American manufacturer of paper cigarette holders, invented a paper straw which does not break down and leave a gritty residue in the beverage. From then on, paper straws are used in drinking mildly-flavored alcohol and icy beverage alike.

[0005] The birth of modem plastics was followed by the replacement of paper straws with plastic straws which human beings are using nowadays, as plastic straws are easier to manufacture, more flexible and attractive than paper straws.

[0006] There is an increasingly strong, ongoing demand for beverage. Furthermore, beverage nowadays often contains tapioca pearls, konjac, chopped fruit, etc. The conventional straw is designed to have its bottom end rested on the bottom of the container; as a result, not only are the tapioca pearls, konjac, and chopped fruit in beverage denied entry into the straw, but they also cluster around the bottom end of the straw and thus ultimately clog the straw.

[0007] Fruit tea, inclusive of chopped fruit, is often introduced into beverage nowadays. However, it is only after consumers have drunk the beverage that the consumers take the chopped fruit out of the empty container and eat the chopped fruit, because it is difficult to take the chopped fruit out of the beverage with the conventional straw. As a result, the conventional straw is useless for the chopped fruit.

SUMMARY OF THE INVENTION

[0008] The objective of the present invention is to provide a straw effective in transferring bulky solids, such as chopped fruit, in a beverage from its container to a user's mouth and preventing solids in the beverage from clogging the straw.

[0009] The straw of the present invention comprises a straw body. The straw body is hollow-cored, cylindrical and made of a plastic material. The straw body has one end provided with a plurality of branch portions and a plurality of openings disposed between the branch portions, wherein the branch portions each have a body segment and a top segment. The body segment has one end connected to the straw body and the other end connected to the top segment. The body segment is entirely of substantially equal width. The top segment has an arcuate outer end.

[0010] In a preferred embodiment, a plurality of tooth portions is disposed on the edge of each said branch portion.

[0011] In a preferred embodiment, the openings are in the number of two and oppose each other radially across the straw body, whereas the branch portions are in number of two and oppose each other radially across the straw body.

[0012] In a preferred embodiment, the branch portions are in the number of four, with two paired said branch portions opposing two other paired said branch portions radially across the straw body, whereas the openings includes two first openings and two second openings, with the two first openings opposing each other radially across the straw body and being between two non-paired said branch portions, and the two second openings opposing each other radially across the straw body and

being between two paired said branch portions.

[0013] In a preferred embodiment, the two first openings are larger than the two second openings.

[0014] In a preferred embodiment, the openings each have an arcuate bottom end.

[0015] In a preferred embodiment, the openings each have a maximum depth equal to one to two times the inner diameter of the straw body.

[0016] With the aforesaid structure and components, the straw of the present invention is effective in transferring bulky solids, such as chopped fruit, in a beverage from its container to a user's mouth and preventing solids in the beverage from clogging the straw.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017]

FIG. 1 is a perspective view of a conventional straw;
FIG. 2 is a perspective view of one end of a straw body of a straw according to the first preferred embodiment of the present invention;
FIG. 3 is a front view of the one end of the straw body of the straw according to the first preferred embodiment of the present invention;
FIG. 4 is a schematic view of a way that the straw works according to the first preferred embodiment of the present invention;
FIG. 5 is a schematic view of another way that the straw works according to the first preferred embodiment of the present invention;
FIG. 6 is a perspective view of the one end of the straw body of the straw according to the second preferred embodiment of the present invention;
FIG. 7 is a front view of the one end of the straw body of the straw according to the third preferred embodiment of the present invention; and
FIG. 8 is a front view of the one end of the straw body of the straw according to the fourth preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENT OF THE INVENTION

[0018] Referring to FIG. 2 and FIG. 3, the present invention provides a straw comprising a straw body 10. The straw body 10 is hollow-cored, cylindrical and made of a plastic material. One end of the straw body 10 has two branch portions 11 and two openings 12 disposed between the two branch portions 11. The two openings 12 oppose each other radially across the straw body 10. Likewise, the two branch portions 11 oppose each other radially across the straw body 10. The branch portions 11 each have a body segment 111 and a top segment 112. The body segment 111 has one end connected to the straw body 10 and the other end connected to the top segment 112. The body segment 111 is entirely of substantially equal width. The top segment 112 has an arcuate outer end. The openings 12 each have a maximum depth equal to one to two times the inner diameter of the straw body 10. The openings 12 each have an arcuate bottom end.

[0019] Referring to FIG. 4, to use the straw of the present invention, a user places the straw body 10 directly in a container which holds a beverage. The beverage contains edible solids, including tapioca pearls, chopped fruit, konjac, etc. The beverage may be replaced with a mixture of beverages. Afterward, the user eats the chopped fruit and konjac in the beverage with the branch portions 11. To take in the tapioca pearls, the user sucks the straw body 10 so that the tapioca pearls enter the straw body 10 through the openings 12. Referring to FIG. 5, if the beverage is running out, the user may press down the straw body 10 to bend the branch portions 11 so as for the straw body 10 to get closer to the bottom of the container, thereby allowing the user to use up the beverage.

[0020] Referring to FIG. 6, the straw body 10 in the second preferred embodiment of the present invention is distinguished from the straw body 10 in the first preferred embodiment of the present invention as follows: in the second preferred embodiment, the branch portions 11 are in the number of four; two paired said branch portions 11 oppose two other paired said branch portions 11 radially across the straw body 10; the openings 12 includes two first openings 121 and two second openings 122; the two first openings 121 oppose each other radially across the straw body 10 and are between two non-paired said branch portions 11; and the two second openings 122 oppose each other radially across the straw body 10 and are between two paired said branch portions 11.

[0021] Referring to FIG. 7, in the third preferred embodiment of the present invention, the straw comprises the straw body 10. One end of the straw body 10 has four branch portions 11 and four openings 12 each disposed between two corresponding ones of the branch portions 11. The branch portions 11 are equal in shape and size. The openings 12 are equal in shape and size. Referring to FIG. 8, the straw body 10 in the fourth preferred embodiment of the present invention is distinguished from the straw body 10 in the third preferred embodiment of the present invention as follows: in the fourth preferred embodiment, a plurality of tooth portions 113 is disposed on the edge of each branch portion 11 to increase the friction between the branch portion 11 and food being transferred by the straw.

[0022] Therefore, the straw of the present invention is effective in transferring solids in a beverage from its container to a user's mouth and preventing the solids in the beverage from clogging the straw.

Claims

1. A straw, comprising:

a straw body (10) being hollow-cored, cylindrical and made of a plastic material and having an end provided with a plurality of branch portions (11) and a plurality of openings (12) disposed between the branch portions (11), wherein the branch portions (11) each have a body segment (111) and a top segment (112), the body segment (111) having an end connected to the straw body (10) and another end connected to the top segment (112), the body segment (111) being entirely of substantially equal width, and the top segment (112) having an arcuate outer end.

2. The straw of claim 1, wherein a plurality of tooth portions (113) is disposed on an edge of each said branch portion (11).

3. The straw of claim 1, wherein the openings are in number of two and oppose each other radially across the straw body, whereas the branch portions (11) are in number of two and oppose each other radially across the straw body.

4. The straw of claim 1, wherein the branch portions (11) are in number of four, with two paired said branch portions (11) opposing two other paired said branch portions radially across the straw body (10), whereas the openings includes two first openings (121) and two second openings (122), with the two first openings (121) opposing each other radially across the straw body (10) and being between two non-paired said branch portions (11), and the two second openings (122) opposing each other radially across the straw body (10) and being between two paired said branch portions (11).

5. The straw of claim 4, wherein the two first openings (121) are larger than the two second openings (122).

6. The straw of claim 1, wherein the openings (12) each have an arcuate bottom end.

7. The straw of claim 1, wherein the openings (12) each have a maximum depth equal to one to two times an inner diameter of the straw body.

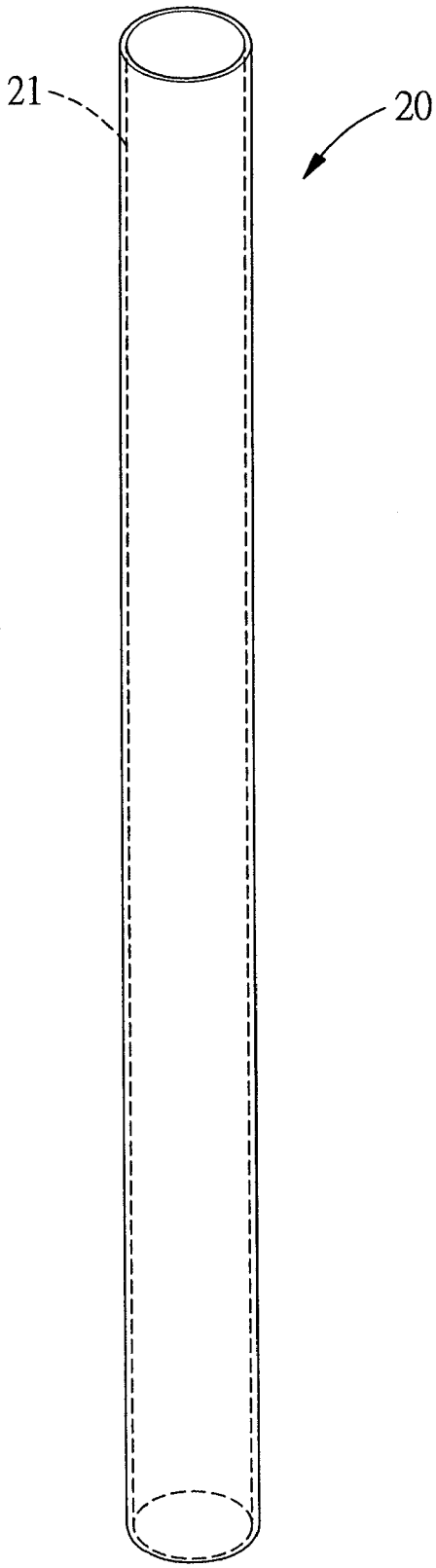


FIG. 1

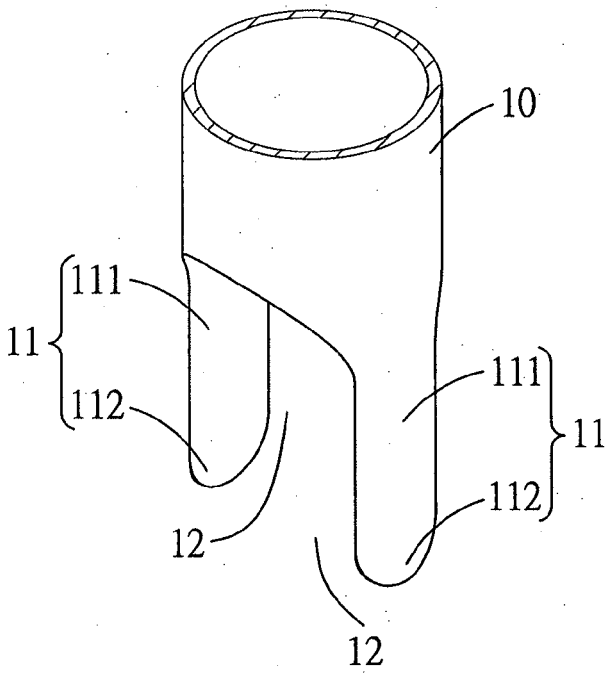


FIG. 2

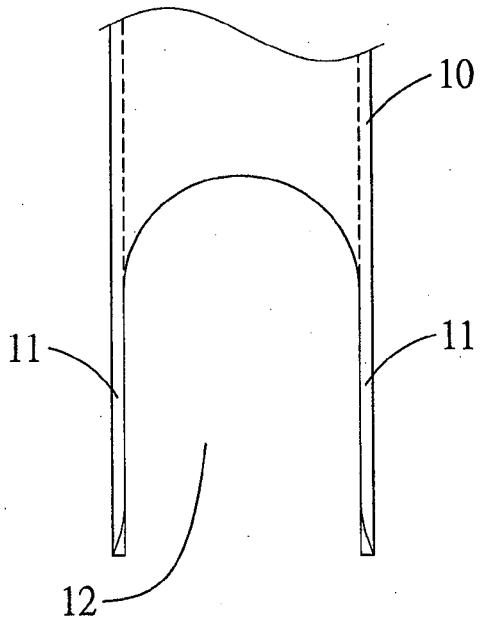


FIG. 3

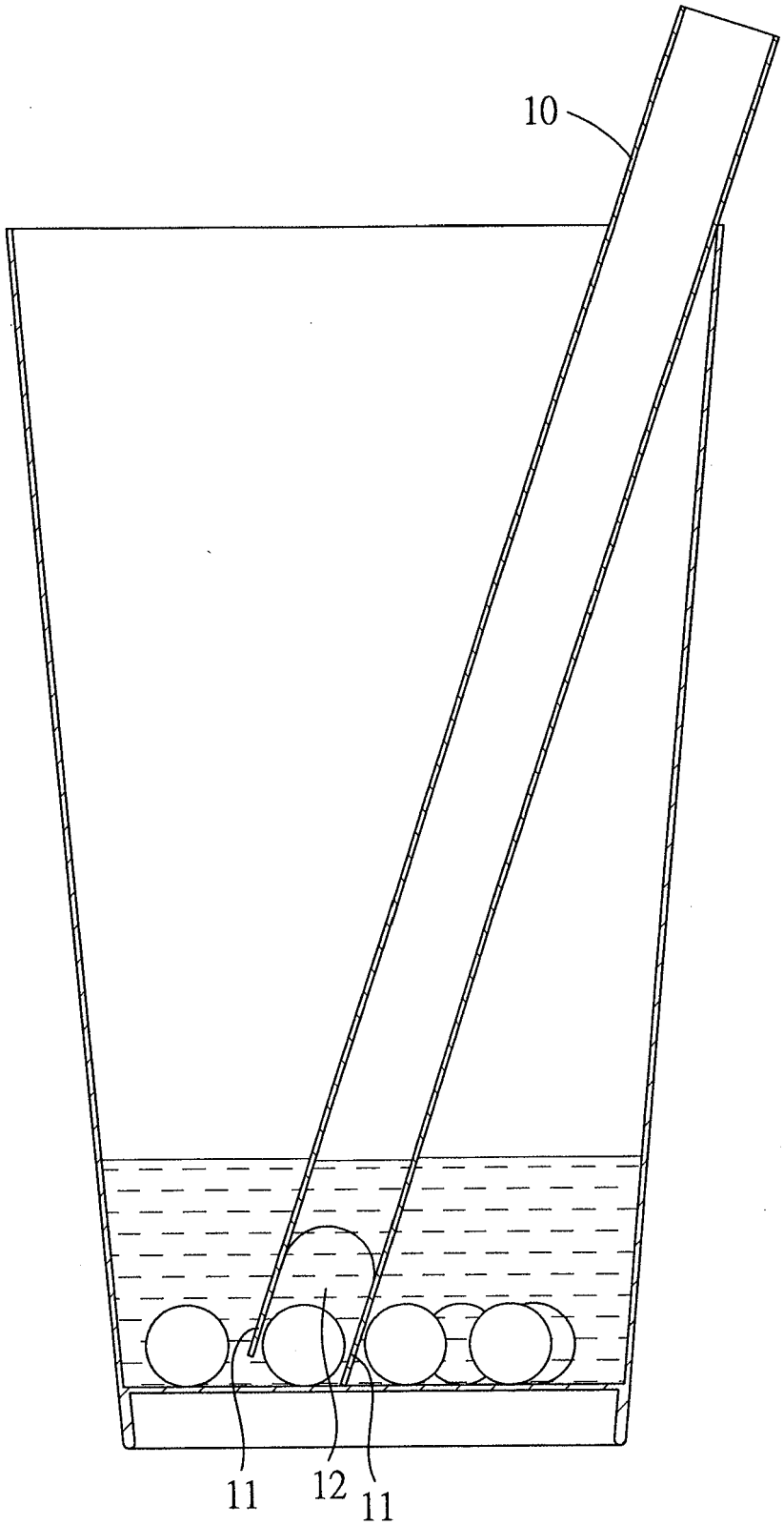


FIG. 4

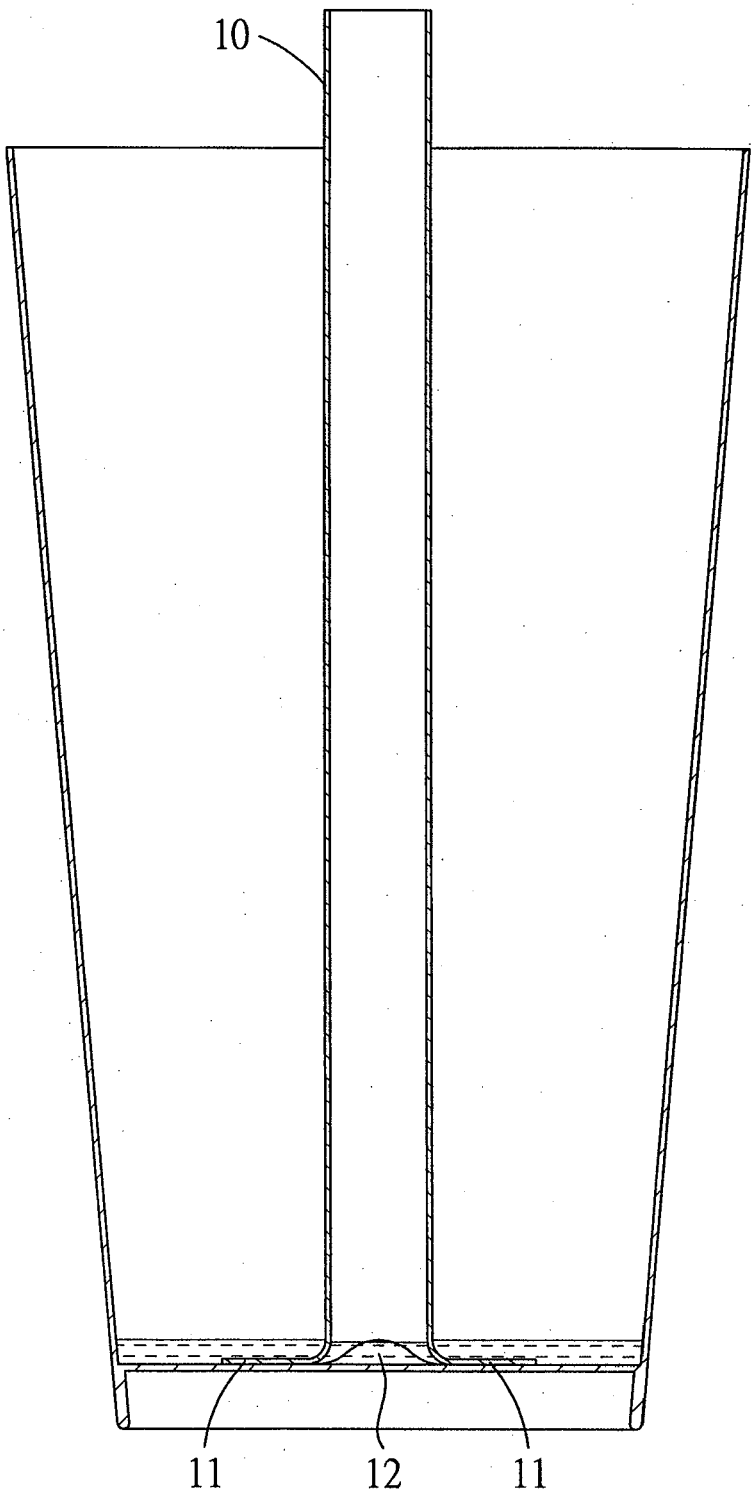


FIG. 5

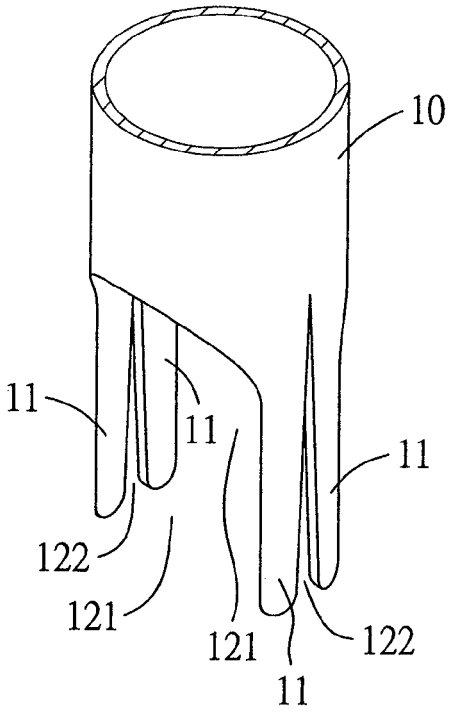


FIG. 6

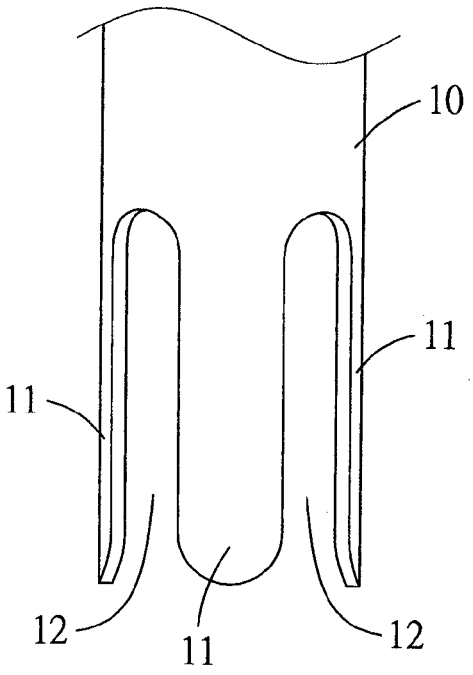


FIG. 7

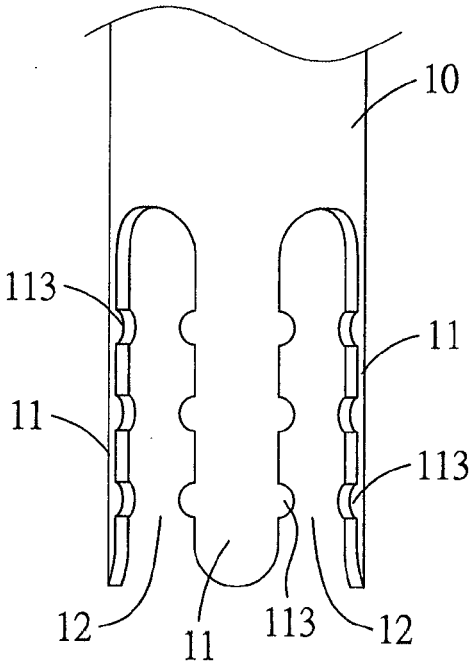


FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 17 18 1786

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	GB 2 404 844 A (BARNARD SARAH [GB]; NYISZTOR TAMAS [GB]) 16 February 2005 (2005-02-16) * page 1, paragraph 6 - page 2, last paragraph; figures *	1-7	INV. A47G21/18
X	JP 4 676561 B1 (SAMON MAMORU) 27 April 2011 (2011-04-27) * the whole document *	1,6,7	
X	US 2013/092750 A1 (LIU NATHANIEL [US]) 18 April 2013 (2013-04-18) * paragraph [0008] - paragraph [0019]; figures *	1,6,7	
A	CN 201 870 359 U (ZHANGJIAGANG QIHUA PLASTICS CO LTD) 22 June 2011 (2011-06-22) * the whole document *	1-7	

TECHNICAL FIELDS SEARCHED (IPC)

A47G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	5 December 2017	Vistisen, Lars

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 17 18 1786

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05-12-2017

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82